

## **REMARKS**

Applicants have fully considered the Final Office action mailed on July 14, 2005. Applicants request entry of the amendment, reconsideration of the application, withdrawal of the rejections, and issuance of a Notice of Allowance.

### **A. The Office Action**

In the Final Office Action, the Examiner rejected claims 3-5 and 8-24. Claims 1, 2, 6, 7, and 11 were allowed. Claims 1-24 remain pending.

Applicants submit that this action should not have been made final. The rejection of claims 16-24 under 35 U.S.C. §103(a) in view of Miyoshi, Crotty, and Kasahara constituted a new ground of rejection based on art, namely the Miyoshi reference, not previously made of record. Applicants respectfully request that the finality of the rejection be withdrawn.

### **B. Examiner Interview**

On August 18, 2005, Scott Slaby (Reg. No. 53,603) participated in a brief telephone interview with the Examiner regarding the consideration of (i) amendments to the pending claims after the issuance of a final office action, and (ii) a declaration by the inventors to overcome the rejection under 35 U.S.C. §112, second paragraph. Scott Slaby initiated the telephone interview to clarify and confirm prior discussions with the Examiner on June 30, 2005 and July 8, 2005 regarding these topics. During the interview on August 18, 2005, the Examiner indicated that the claim amendments would be entered and that the declaration to overcome the §112 rejection and the amendments would be considered. Applicants and their attorney thank the Examiner for her time and courtesy.

### **C. Claims 3-5, 8-10, and 12-24 are Not Indefinite**

The Examiner rejected claims 3-5, 8-10, and 12-24 under 35 U.S.C §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner contends that sulfate ions and fluoride ions can be used as oxidizing agents and that their inclusion in the claims contradicts the claimed coating composition being

substantially free of oxidizing agents other than the nitrate ions or nitric acid as recited in the independent claims. Applicants traverse this rejection.

Applicants note that claim 5 is amended herein to change “salts” to “ions” such that claim 5 recites that the film polisher comprises fluoride ions. This change is made to be consistent with other claim language that recites fluoride ions. This amendment is made for clarification purposes only and is not made for reasons related to patentability.

Applicants submit that sulfate ions and fluoride ions are not oxidizing agents and therefore their inclusion in any claims does not render the claims indefinite. Sulfate ions and fluoride ions are not oxidizing agents. An oxidizing agent is a chemical ion that will cause another chemical ion or compound to lose electrons. That is, an oxidizing agent gains electrons and is reduced. Sulfate ions and fluoride ions are not capable of oxidizing another chemical ion or compound in accordance with the above definition. Rather, they are simply anions that balance out a cation to make a compound and are similar to, for example, salt, i.e., sodium chloride (NaCl). In sodium chloride, the chloride ( $\text{Cl}^-$ ) is an anion that balances out the sodium cation ( $\text{Na}^+$ ) to form salt. Similar to the chlorine anion, fluoride anions and sulfate anions do not accept or gain electrons and therefore do not perform the role of an oxidizer.

Further, the references cited by the Examiner do not teach the use of sulfate or fluoride ions as an oxidizing agent. First, U.S. Patent No. 5,338,375 to Benderly does not teach or show that sulfate acts as an oxidizing agent. The Examiner relies on column 2, lines 59-62 of Benderly as an example of sulfate being used as an oxidizer. Viewing the reference as a whole, however, and in particular the entire paragraph upon which the Examiner relies, a person skilled in the art would understand that the iron ion is being used as the oxidizing agent rather than the sulfate ion. Specifically, the Benderly patent teaches that the corrosion inhibitory effect is based on the oxidation state of iron in the iron salt, and that the iron must be in the ferric, i.e., iron (III), state (Col. 2, lines 42-62). That is, the Benderly patent merely teaches that iron in a +3 oxidation state is the preferred oxidizing agent due to its high oxidation-reduction potential relative to iron in the +2 oxidation state. Benderly does not teach or suggest that sulfate acts as an oxidizing agent. As previously discussed, the sulfate cannot act as an oxidizing agent. Rather, the sulfate is merely a possible anion for the ferric cation.

Second, U.S. Patent No. 5,691,048 to Roberto does not teach the use of fluoride ions as an oxidizer. The Roberto patent is directed to an article of manufacture in which a metal substrate has an undercoating made from a metal compound and a coating containing an autodeposited resin. The autodeposited resin is a coating comprising an acid, an oxidizing agent, and an aqueous dispersed resin. The Examiner relies on column 3, lines 61-64 for teaching the use for fluoride as an oxidizing agent. Lines 61-64 state that the composition preferably contains "hydrofluoric acid and hydrogen peroxide or iron (III) fluoride as the oxidizing agent." The Roberto patent teaches that hydrofluoric acid may be the acid component of a composition and does not teach or suggest that hydrofluoric acid is an oxidizing agent. Rather, similar to Benderly's teachings of iron (III) sulfate, Roberto's teachings of iron (III) fluoride does not teach the use of fluoride as an oxidizing agent. Similar to Benderly, it is the iron (III) cation that is acting as the oxidizing agent and not the fluoride ion. The fluoride ion merely exists as an anion to balance out the iron (III) cation to form a ferric fluoride salt. As previously described, fluoride ion is not capable of accepting electrons and acting as an oxidizing agent.

For at least these reasons, Applicants respectfully submit that the references cited by the Examiner do not teach or suggest that either sulfate or fluoride ions may act as an oxidizing agent. Consequently, the presence of sulfate and/or fluoride ions in any of the dependent claims does not contradict the feature that the claimed coating composition is essentially free of oxidizing agents other than the nitrate ions or nitric acid. Therefore applicants submit that claims 3-5, 8-10, and 12-24 are not indefinite. Applicants respectfully request that the rejection of claims 3-5, 8-10, and 12-24 be withdrawn.

To expedite prosecution, however, Applicants submit a declaration by the inventors, Leonard Diaddario and Michael Marzano, stating that sulfate ions, fluoride ions, and/or polishing agents do not act as oxidizing agents in the conversion coating compositions or baths. In a telephone call with the Examiner on July 8, 2005, the Examiner indicated that such a declaration would overcome the rejection.

Applicants submit that the foregoing argument along with the declaration by the inventors remedy the Examiner's concerns. Applicants request that the rejection be withdrawn.

**D. Claims 16-20 and 24 Are Not Obvious In View of the Combination of Myoshi, Crotty, and Kasahara**

The Examiner rejected claims 16-20 and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,280,535 to Miyoshi et al., in view U.S. Patent No. 4,578,122 to Crotty, in further view of U.S. Patent No. 4,200,475 to Kasahara. Applicants traverse this rejection.

Claim 16 is amended herein to recite that the conversion coating is an acidic conversion coating. This amendment is made to be more consistent with other claims.

There is no basis and no teaching or suggestion to modify Myoshi with Crotty to arrive at the subject matter of claims 16-20 and 24. Myoshi is directed to a method for producing hot-galvanized chromated steel using a chromating solution that comprises chromium (VI) ions, chromium (III) ions, and nitrate ions. The Examiner acknowledges that Myoshi fails to teach a coating composition substantially free of chromium (VI) ions. The Examiner relies on Crotty for teaching that chromium (III) ions may be used to replace chromium (VI) ions in the Myoshi solution. This modification, however, is not appropriate and does not render the claims obvious.

First, modifying Myoshi by replacing chromium (VI) ions with chromium (III) ions would render Myoshi unsatisfactory for its intended purpose. There is no suggestion or motivation to modify a reference if the modification would render the invention being modified unsatisfactory for its intended purpose. M.P.E.P. 2143.01, pg 2100-131 (8<sup>th</sup> ed.). Myoshi teaches that its chromate solution has a trivalent chromium (Cr(III)) to hexavalent chromium (CrVI) ratio of from 1:9 to 1:1 and preferably 1:4 to 2:3. (Col. 6, lines 41-43). Myoshi also states that the hexavalent chromium ions are necessary to prevent white rust. (Col. 6, lines 51-58). The Myoshi bath, therefore, requires at least the same concentration of chromium (VI) ions as chromium (III) ions and may have nine times more hexavalent chromium than trivalent chromium to produce the desired effect. Myoshi further teaches that if the ratio of trivalent to hexavalent chromium "exceeds 1/1, no satisfactorily improved corrosion resistance can be expected from hexavalent chromium ions." (Col. 6, lines 48-50). Thus, Myoshi teaches that a significant amount of hexavalent chrome, at least in equal concentration to the trivalent chromium, is required for the chromate solution to function properly. Modifying Myoshi with Crotty by replacing the hexavalent chromium in the Myoshi chromate with trivalent chromium, therefore, would render the Myoshi chromate unsatisfactory for its intended purpose.

Second, combining the Myoshi and Crotty references does not render the claims obvious because the references teach away from the subject matter of claims 16-20 and 24. The method of claim 16 employs a conversion coating composition that is substantially free of chromium (VI) ions. Myoshi, however, teaches that its chromate solution requires chromium (VI) ions, in significant amounts, and that its chromate would not function properly without chromium (VI) ions. Myoshi, therefore, teaches away from a bath substantially free of chromium (VI) ions.

Crotty teaches away from the recited ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1. Crotty, as explained on numerous other occasions, requires that its chromate have a nitrate to chromium plus activating metal ratio of at least 4:1. Crotty teaches away from ratios less than this and especially less than 1.5:1 as recited in the claims such as independent claim 16.

Consequently, there is no teaching or suggestion to modify Myoshi with Crotty because considering the references as a whole: (1) modifying Myoshi with Crotty to provide a bath substantially free of hexavalent chromium ions renders Myoshi unsuitable for its purpose, and (2) Myoshi teaches away from eliminating hexavalent chromium from its chromate, and Crotty teaches away from the nitrate to chromium (III) plus cobalt (II) ratio of 1.5:1 or less as recited in the claims.

Kasahara was relied on only for its alleged teachings about exposing an article to a dye solution. Kasahara does not cure the defects in the Myoshi and Crotty references.

Therefore, claims 16-20 and 24 are patentable over the teachings of Myoshi in view of Crotty and Kasahara. Applicants request that the rejection under 103(a) be withdrawn.

#### **E. Claims 21-23 are Not Obvious in View of the Cited References**

The Examiner rejected claims 21-22 under 35 U.S.C. 103(a) as being unpatentable over Miyoshi in view of Crotty and Kasahara, further in view of U.S. Patent No. 2,393,640 to King. Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi in view of Crotty and Kasahara, further in view of U.S. Patent No. 5,200,292 to Shiniozaki et al. Applicants traverse these rejections.

Claims 21-23 are dependent from independent claim 16. The King and Shinozaki references are relied on for allegedly teaching aspects of the recited dyeing

and subsequent rinsing steps recited in the referenced claims. The combination of Miyoshi, Crotty, and Kasahara, however, as described above, do not render claim 16 obvious. The additional references applied by the Examiner to claims 21-22 and 23 do not make up for the deficient teachings of Miyoshi, Crotty, and Kasahara. Therefore, claims 21-23 are not obvious in view of the cited references. Applicants request that the rejection of claim 21-22 and 23 each be withdrawn.


### CONCLUSION

For the reasons detailed above, Applicants respectfully submit that all claims remaining in the application (Claims 1-24) are now in condition for allowance.

Respectfully submitted,

FAY, SHARPE, FAGAN, MINNICH & McKEE, LLP

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Scott A. McCollister, Reg. No. 33,961  
Scott M. Slaby, Esq., Reg. No. 53,603  
1100 Superior Avenue, Seventh Floor  
Cleveland, Ohio 44114-2518  
Telephone: 216/861-5582

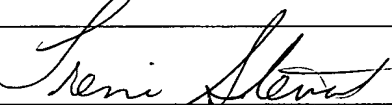
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#### CERTIFICATE OF MAILING

Under 37 C.F.R. § 1.8, I certify that this Amendment is being deposited with the United States Postal Service as First Class mail, addressed to: MAIL STOP - AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.

Date: September 12, 2005

Signature:



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